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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,325	05/13/2002	Donald Jaffrey	A-71183/DJB/MAK	6999

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10/17/2003

Flehr Hohbach Test
Albritton & Herbert
Suite 3400
Four Embarcadero Center
San Francisco, CA 94111-4187

EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/17/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,325

Applicant(s)

JAFFREY, DONALD

Examiner

Jonathan S. Crepeau

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Remarks

1. The USPTO is participating in a search exchange pilot program with the Australian Patent Office (APO). As part of the pilot program the USPTO has received a copy of the Office action prepared by the APO on the counterpart AU application for which priority under 35 USC 119(a) is claimed. The references cited in the APO Office action have been considered by the examiner, as shown in the attached Information Disclosure Statements.

Claim Suggestions

2. Claim 7 recites that a thickness of the aluminum oxide layer is "in the range of from about 1 to about 10 microns, preferably from about 1 to about 3 microns." To improve the clarity of the claim, it is suggested that one of the ranges be removed or that the ranges be recited in separate claims. Appropriate correction is suggested, but not required.

Claim Objections

3. Claim 11 is objected to because of the following informalities: The preamble of the claim is "A solid oxide fuel cell system according to claim 1...". However, claim 1 is directed to a solid oxide fuel cell *component*. Thus, the two preambles are inconsistent. Herein, claim 11 will be interpreted as being directed to a solid oxide fuel cell system component. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-236267. Regarding claims 1 and 9, the reference is directed to a molten carbonate fuel cell component (e.g., a separator plate) comprising a heat-resistant alloy (see abstract; page 3, third paragraph of translation). Regarding claims 1 and 2, the alloy comprises 0.5-10 wt% Al, 0.5-10% Si, 0.5-30% Cr, 0.5-7% Ni, and the balance Fe (see claim 3 of the translation). This composition is considered to be anticipatory of the composition recited in claims 1 and 2 because each individual element range overlaps. Regarding claim 3, the alloy does not contain Mn. Regarding claim 8, which recites that source material for the alloy includes scrap metal, this limitation does not have to be accorded patentable weight because it does not further limit the structure of the component. See MPEP §2113. Regarding claims 1 and 11, although the reference is directed to a molten carbonate fuel cell, the alloy-containing component (e.g., separator) is also capable of being used in a solid oxide fuel cell. In this regard, the preamble of claim 1 is interpreted as a statement of the intended use of the component in a solid oxide fuel cell. See MPEP §2111.02. Regarding claim 10, the separator plate of the reference may also be considered to be a “base plate” or a “heat exchanger plate.”

Thus, the instant claims are anticipated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minh (U.S. Patent 6,296,962) in view of Caule et al (U.S. Patent 3,811,874).

Regarding claims 1 and 9-11, Minh is directed to a solid oxide fuel cell comprising an interconnect plate (i.e., "separator" or "base" plate) (12) which is made of a heat and oxidation-resistant alloy (see col. 4, lines 14-16).

However, the reference does not expressly teach the composition of the alloy as recited in instant claims 1-5, or that the plate has a surface layer of aluminum oxide, as recited in claims 6 and 7.

The patent of Caule et al. is directed to an oxidation resistant iron base alloy. In column 1, line 54 et seq., the reference teaches that the alloy may comprise 1-7 wt% Al, 1-4% Si, up to 0.04% P, up to 0.04% S, up to 1.5% Mn, and up to 2% carbon. The alloy does not contain Cr (see Table A). The alloy further has a layer of Al_2O_3 on the surface when exposed to an oxidizing environment (see col. 5, lines 23-27).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the oxidation-resistant alloy of Caule et al. as the material of the oxidation-resistant interconnect

plate of Minh. In column 1, lines 34-49, Caule et al. teach that their alloy has a “low cost” and exhibits “improved resistance to corrosion in ambient environments without the disadvantage of extensive red rust rundown.” Accordingly, the artisan would be motivated to use the alloy of Caule et al. in the interconnect plate of Minh. It is noted that the alloy composition disclosed by Caule et al. is considered to be anticipatory of the alloy composition recited in claims 1-5 because each individual element range overlaps.

Regarding claim 7, the thickness of the aluminum oxide film which is formed on the surface of the alloy of Caule et al. is a parameter which may be manipulated by the skilled artisan. Aluminum oxide is recognized by the prior art as being a poor electrical conductor. Therefore, the artisan would have motivation to make this layer as thin as possible while at the same time making it thick enough so as to maintain good oxidation resistance. Accordingly, the claimed range of 1-10 microns is not considered to distinguish over the references.

Regarding claim 8, which recites that source material for the alloy includes scrap metal, as noted above, this limitation does not have to be accorded patentable weight because it does not further limit the structure of the component.

Conclusion

8. The following notes are made with respect to the references cited in the International Search Report which bear an “X” label that have not been applied above:

The abstract of SU 544709 does not anticipate claim 1 because it does not teach a component *per se* that is usable in a solid oxide fuel cell.

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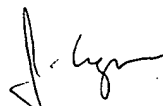
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (703) 305-0051 (prior to December 17, 2003) or (571) 272-1299 (after December 17, 2003). The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (703) 308-4333. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900. Additionally, documents may be faxed to (703) 872-9310 (for non-final communications) or (703) 872-9311 (for after-final communications).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JSC

October 10, 2003


JONATHAN CREPEAU
PATENT EXAMINER
ART UNIT 1746